

Rahul Duggal

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EDUCATION

Georgia Institute of Technology, College of Computing

2018 – Present

- Ph.D. in Computer Science (GPA : 4.0/4.0)

University of Delhi, Netaji Subhas Institute of Technology, India

2011 – 2015

- Bachelors (B.E.) in Computer Engineering (GPA : 3.5/4.0)

WORKING PAPERS

[R2] R Duggal, S. Freitas, S.Dhamnani, P. Chau, J. Sun, “**HAR: Hardness Aware Reweighting for Imbalanced Datasets**” [[Arxiv](#)]

[R1] R Duggal, C Xiao, R. Vuduc, P. Chau, J. Sun, “**CUP: Cluster Pruning for Compressing Deep Neural Networks**” [[Arxiv](#)][[Code](#)]

PUBLICATIONS

[C4] R Duggal, H. Zhou, S. Yang, Y. Xiong, P. Chau, W. Xia, Z. Tu, S. Soatto “**Compatibility-aware Heterogeneous Visual Search**”, Computer Vision and Pattern Recognition (CVPR), Jun 2021.

[C3] R Duggal, S. Freitas, C. Xiao, D.H. Chau, J. Sun, “**REST: Robust and Efficient Neural Networks for Sleep Staging in the Wild**”, The World Wide Web Conference (WWW), Taiwan, Apr 2020. [[Paper](#)][[Code](#)]

[C2] R Duggal, Anubha Gupta, et al, “**SD-Layer: Stain Deconvolutional layer for CNNs in Medical Microscopic Imaging**”, 20th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Canada, Sep 2017. [[Paper](#)][[Code](#)]

[C1] R Duggal, A Gupta, et al, “**Overlapping Cell Nuclei Segmentation in Microscopic Images Using Deep Belief Networks**”, 10th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), India Dec 2016. [[Paper](#)][[Code](#)]

[J1] A. Gupta, R Duggal, S.Gehlot, R. Gupta, A. Mangal, L. Kumar, N. Thakkar, D. Satpathy “**GCTI-SN: geometry-inspired chemical and tissue invariant stain normalization of microscopic medical images**”, Medical Image Analysis (**Impact Factor 11.1**) Feb 2020. [[Paper](#)]

[W1] R Duggal, A Gupta, “**P-TELU: Parametric Tan Hyperbolic Linear Unit Activation for Deep Neural Networks**”, International Conference on Computer Vision (ICCV) : Workshop on Compact and Efficient Feature Representation and Learning, Italy, Oct 2017. [[Paper](#)]

GRADUATE COURSEWORK

Mathematical foundations for Machine Learning, Machine Learning, Deep Learning, Convex Optimization, Advance Computer Vision, Graduate Algorithms.

PROFESSIONAL EXPERIENCE

Research Intern, Amazon AI

May 2020 – Nov 2020

- Worked in the face recognition group mentored by Shuo Yang, Hao Zhou and Wei Xia.
- Developed a novel neural architecture search method for open set, visual search applications such as fashion retrieval and face recognition.
- Paper published in CVPR 2021.

Graduate Research Assistant, Georgia Tech

Aug 2018 – Present

- Advised by Prof. Polo Chau at Georgia Tech [[Lab Page](#)]
- Co-Advised by Prof. Jimeng Sun at UIUC [[Lab Page](#)]

Software Developer, Epic Systems, Madison, WI, USA

Oct 2017 – Jun 2018

- Developed software for scheduling and documenting surgery time procedures.

Research Assistant, SBILab at IIIT-Delhi, India [[Lab Page](#)] **Jan 2016 – Sep 2017**

- Developed a software tool to diagnose Leukemia from medical images.
- Developed Deep Learning based methods leading to publications at top conferences.

Summer Intern, Samsung Research India **Jun 2014 – Jul 2014**

- Developed a prototype power saving application for Samsung's new flagship OS - Tizen.

SERVICE

Teaching Assistantship

- CS 7643 Deep Learning (Spring 2021)
- CS 7643 Deep Learning (Spring 2020)

Reviewer / Sub-Reviewer

- CVPR 2021
- KDD 2020
- ICLR 2019
- ICML 2019

PRESS

- [[Georgia Tech](#), [TechXplore](#), [AIhub](#)] "Machine Learning Technique Helps Wearable Devices Get Better at Diagnosing Sleep Disorders and Quality"

TALKS

- Compatibility-aware Visual Search, *Amazon AWS Rekognition* (Nov '21)

SKILLS

Deep Learning Libraries : Pytorch (fluent), Mxnet (fluent), Tensorflow (Basic), Caffe (basic), Theano (basic).

Web Platforms : MeteorJS (fluent), Node (basic).

Version Management : Git (fluent)

Datastructures & Algorithms

Was active on several sport programming platforms through my handle jonvonneumann.

- Codeforces : Peak Rating 1682, **title - Expert**.
- Codechef : 131 problems solved, **peak global rank 307**.
- Ranked 186 and 168 worldwide, in google APAC rounds A and B. Invited to interview onsite at Google.

2014